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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,642	07/23/2003	Yuji Koga	116247	6887
25944	7590	12/23/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			MRUK, GEOFFREY S	
			ART UNIT	PAPER NUMBER
			2853	

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/624,642

Applicant(s)

KOGA, YUJI

Examiner

Geoffrey Mruk

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 10, 12, 16, 18 and 20 is/are rejected.
- 7) ☒ Claim(s) 2-9, 11, 13-15, 17, and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested:

Printer with Reinforcing Cover and Ink Tube Guides.

### ***Claim Objections***

Claim 17 is objected to because of the following informalities:

The language is unclear to what is meant by "printing movement direction". The examiner suggests the following: "main scanning direction".

Claim 18 objected to because of the following informalities:

The language is not clear to what is meant by "the at least one ink tube comprises a plurality of ink tubes providing an ink tube for each print color, and the at least one FPC comprises at least two FPC". The examiner suggests the following: "at least one ink tube group comprises a plurality of ink tubes providing an ink tube for each print color, and at least one FPC group comprises at least two FPC".

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 10, 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Chosa et al. (US 5,831,656).

With respect to Claim 1, Chosa discloses a printer comprising:

- a recording unit (Fig. 3) including a print head (Fig. 3, element 1) that prints onto a recording sheet (Fig. 3, element P),
- a carriage (Fig. 3, element 2) that has the print head thereon,
- a guide mechanism (Column 5, lines 32-56) that guides and supports the carriage in a main scanning direction, and
- a carriage moving mechanism (Fig. 3, elements 10, 11, 13) that moves the carriage in the main scanning direction,

the recording unit comprising:

- a frame (Fig. 3, element 4) that surrounds a scanning range of the carriage in which the print head performs printing onto a recording sheet (Fig. 3, element P),

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- the guide mechanism (Column 5, lines 32-56) and the carriage moving mechanism (Fig. 3, elements 10, 11, 13) attached to the frame,
- the frame (Fig. 3, element 4) having at least an opening on a top thereof; and
- a cover body (Fig. 4, element 17) that is fixed to the frame (Fig. 3, element 4) so as to block a part of the opening of the frame and that has a window that enables a user to have access to a recording sheet (Fig. 3, element P) within the frame.

With respect to claim 10, Chosa discloses a frame that includes

- a front wall (Fig. 4, element 18) that extends along the scanning direction of the carriage and
- a rear wall (Fig. 4, element 18) provided facing the front wall, and
- the cover body (Fig. 4, element 17) connects at least the front wall and the rear wall of the frame.

With respect to claim 12, Chosa discloses a window of the cover body (Fig. 4, element 17) is defined with the edge portion such as to allow access to the print head only when the carriage is in a specified position (Column 6, lines 12-32).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramatsu et al. (US 6,789,882 B2) in view of Rasmussen et al. (4,872,026).

With respect to claim 16, Hiramatsu discloses a printer using liquid ink, comprising:

- an electrical controller (Fig. 1, element 18);
- a frame (Fig. 1, element 17) having a front wall (Fig. 1, element 17),
- a rear wall (Fig. 2, element 17) and a pair of side walls (Fig. 4, element 17);
- a top plate (Fig. 9, element 28) covering an opening defined by the frame, the top plate attached to at least the front wall and the rear wall and having a window (Fig. 9, element 29) opening therein;
- a print carriage casing (Fig. 1, element 17) carrying a print head mounted for reciprocal movement within the frame (Column 4, lines 56-65);
- at least one ink cartridge (Fig. 1, elements 2a-2d) mounted to the printer outside the frame (Fig. 1, element 2);

- at least one ink tube (Fig. 1, element 3) extending between the at least one ink cartridge (Fig. 1, element 2a-2d) and the print head (Fig. 1, element 1); and
- at least one flexible printed circuit (FPC) (Fig. 1, element 21) extending between the electrical controller (Fig. 1, element 18) and the print head (Fig. 1, element 1), wherein the at least one ink tube (Fig. 1, element 3) and the at least one FPC are fixed to the metal frame at entry positions proximate a center (Fig. 4, elements 3, 21) of a printing movement range of the carriage (Fig. 4, element 4).

With respect to claim 18, Hiramatsu discloses a printer according to claim 16, wherein the print head (Fig. 1, element 1) prints in a plurality of colors (Column 6, lines 25-30) the at least one ink tube (Fig. 1, element 3) comprises a plurality of ink tubes (Column 6, lines 31-37), providing an ink tube for each print color, and the at least one FPC (Fig. 1, element 21) comprises at least two FPC.

With respect to claim 20, Hiramatsu discloses a printer according to claim 18, wherein each ink tube has a line extending along a length thereof (Column 6, lines 38-46).

Hiramatsu does not expressly disclose a metal frame as stated in claim 16.

Rasmussen discloses a "carriage guide comprises stiff thin sheet metal" (Column 5, lines 53-59).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to construct the frame of Hiramatsu out of sheet metal. The motivation for

doing so would have been that sheet metal is "closely toleranced and has well-controlled dimensions" (Column 5, lines 53-59).

***Allowable Subject Matter***

Claims 2-9,11,13-15,17, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With respect to claim 2, the prior art of record fails to disclose a window of a cover body, where the end of the window with respect to the main scanning direction, is formed in a round shape similar to the curve of the ink tubes. Claims 3-9, 11, and 13-15 are dependent on claim 2 and are objected to.

With respect to claim 17, the prior art of record fails to disclose an elongated window opening in the printing movement direction, having an edge with curved ends, a recess adjacent to one end and the rear wall of the metal frame, and a projected portion extending from proximate the front wall to overhang the fixing positions of the ink and FPC to the frame.

With respect to claim 19, the prior art of record fails to teach a second ink tube group extending from a second fixing point to an opposite side of the print head and a second FPC extending from a fourth fixing point to the opposite side of the print head, wherein the second ink tube group and the second FPC are joined.

**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Strong (US 3,373,435) teaches two ink tubes, formed in a loop, used to supply ink from an ink supply to the tip of a recording pen.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey Mruk whose telephone number is (571) 272-2810. The examiner can normally be reached on 7am - 330pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GM

GSM

12/17/2004

  
Mamish Shah.  
Primary Examiner.